Long memory
in the Egyptian stock market returns

AMR ALGARHI *†
University of Exeter
United Kingdom
June 2010

Abstract

This paper examines the presence of long memory in the daily returns of the Egyptian stock market, using parametric and semiparametric methods. Both techniques have their merits and demerits. Accordingly, the Exact Maximum Likelihood (EML) estimation is employed to estimate the ARFIMA model in the time domain; while two main semiparametric techniques, log periodogram (LP) and local Whittle (LW), were applied to estimate the memory parameter in the frequency domain. Unlike the findings for developed equity markets, the results show strong and significant evidence of long memory in the Egyptian stock returns, which refutes the hypothesis of market efficiency. As a result the Egyptian stock returns can be predicted using historical information. The findings of this paper are helpful to regulators, financial managers and investors dealing in the Egyptian stock market.

JEL Classification: C14, C22.

Keywords: ARFIMA; Egyptian stock market; Exact maximum likelihood estimation; Local Whittle estimation; Log-periodogram regression; Long memory.

*Amr Algarhi: a.s.i.algarhi@exeter.ac.uk
†I would like to thank Professor James Davidson at University of Exeter for supplying the TSM software. Empirical applications were performed in OxMetrics 6 and TSM 4.32. All remaining errors are mine.